

Ernest Tooohukwu

Samuel



Portfolio

Mechatronics Engineer

I am an innovative and diligent cross-disciplined Engineering degree holder with a diverse background. I have spent six months in the construction industry as a Mechanical Engineer, followed by a year in the renewable energy/sustainability sector, specialising in Solar PV as an Operations and Maintenance Engineer. In addition to my technical skills, I bring one year of experience in Finance Management and fundraising for the TEDx organisation. I am currently leveraging my analytical abilities in an 11-month and counting role as a Data Analyst for an AI startup company. My commitment to sustainable innovation, process optimization, and data-driven decision-making across multiple domains defines my career journey.

Contact

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- Ashesi University, Berekuso, Eastern region, Ghana

Education

MSC. MECHATRONICS ENGINEERING

Ashesi University, Ghana
January 2023 – Present

Renewable Energy Technologies, International Environmental Politics, Investment appraisal and cost-effectiveness analysis, Corporate Responsibilities and sustainability, Energy Systems and Mobility, Process Engineering, Leading Teams, Control Systems, Machine Learning,

Experience

DATA PREPROCESSING ENGINEER

NSMQ AI, ACCRA, GHANA (REMOTE)
April 2023 – Present

- Developing and implementing data preprocessing pipelines for AI training using various techniques, including data scraping, video cropping, and textbook parsing.
- Developed and Implemented Python scripts to parse textbooks into a well-structured JSON, TXT, and CSV format.
- Contributing scripts and documentation to the open-source NSMQ AI GitHub repository to support reproducibility and collaboration.
- Complying with ML engineering best practices and data preprocessing code.
- Developed and implemented a Python script to crop videos based on subject or riddle segmentation, identifying each subject or riddle's start and end points in the video.

Manufacturing
Processes, Systems
Identification and
Modeling, Robotics
and Mechatronics,
Systems Identification
and Modelling,
Advanced
Communication
Systems and Internet
of Things,
Development
Economics,
Sustainable
Engineering, Product
Development and
Reliability and Risk

MAS. MECHATRONICS ENGINEERING

ETH Zurich,
Switzerland
January 2022 - Present

Mathematical Tools,
Thermofluids,
Computer
Programming and
Embedded Systems,
Analog and Digital
Electronics, Statics
and Solid Mechanics,
Signals and Systems,
Material Engineering,
Dynamics and
Computational
Methods

B. ENGR MECHANICAL ENGINEERING

University of Nigeria,
Nigeria
October 2014 –
September 2019

Grade: 4.18/5

FINANCE AND SPONSORSHIP MANAGEMENT

TEDXASHESIUNIVERSITY, ACCRA, GHANA

September 2022 – May 2023

- Curated and Managed budget.
- Sourced for funds and sponsorship and raised 10% more than the budgeted amount.
- Analysed and Managed Cash flow internally and externally.

OPERATIONS AND MAINTENANCE ENGINEER

ICE COMMERCIAL POWER, DELTA STATE, NIGERIA

January 2021 – January 2022

I Ensured daily Operations and maintenance of ten mini-grid solar plant sites in Asaba, Delta State, Nigeria.

- Troubleshooted, Maintained, Changed, and Installed smart meters
- Monitored all sites on two independent Software UI and resolved any observed issues within the shortest possible time.
- Designed, installed, and maintained Solar PV systems.
- Collated daily Energy generation and consumption data
- Detailed daily reporting to the Regional Operations Manager through Google Sheets, forms, and email.
- Carried out monthly and weekly data analysis and presentation of site performance with improvement and optimisation suggestions

MECHANICAL ENGINEERING INTERN

FEROTEX CONSTRUCTION COMPANY, ENUGU STATE, NIGERIA

April 2018 – October 2018

- Assisted in servicing and maintaining heavy-duty machinery (Caterpillar machines and trucks).
- Managed spare parts Inventories, diesel, and engine oil usage daily.
- Reported daily to the Head of the mechanical department.

INFORMATION AND COMMUNICATION TECHNOLOGY INTERN

UNIVERSITY OF NIGERIA ICT UNIT, ENUGU STATE NIGERIA

July 2017 - September 2017

July 2016 - September 2016

- Designed and managed Google forms for e-documentation

Skills

Emotional
Intelligence

Energy Audit and
Storage Design.

Electrical
Connections.

Solar PV System
Design and
Installation.

Cash Flow
Management and
Analytics

Microsoft Office

Creativity Technique.

Problem-Solving and
Critical Thinking.

Troubleshooting:
Mechanical and
Electrical.

CAD Design: NX and
Autodesk Inventor.

Teamwork.

Programming:
Python, C++, MATLAB,
HTML and PLC.

Data Analyst and
Machine Learning.

- Carried out WIFI connectivity monitoring and downtime optimisation protocols by reporting to the management.
- Transformed and uploaded physical files into e-records using Microsoft Suits for the Department of Education Foundation.

Courses and Certifications

TECHNICAL SALES; THE ROLE OF SALES ENGINEER

LINKEDIN LEARN

May 2022

- Acquired expertise in technical sales techniques.
- Achieved proficiency in contract closure techniques.
- Gained proficiency in developing marketing strategies and planning skills.

SOFT-SKILLS TRAINING

JOBBER MAN (COUSERA COURSE)

March 2021

- Proficient in team collaboration and effective communication.
- High emotional intelligence for improved interpersonal relationships.
- Applied creative techniques for innovative solutions.
- Strong critical thinking for informed decision-making.
- Demonstrated leadership skills for goal attainment.
- Effective networking for valuable professional relationships.
- Demonstrated leadership skills for goal attainment.

ENERGY TRANSITION; INNOVATION TOWARDS A LOW-CARBON FUTURE

IFP SCHOOL-COLLEGE IN RUEL-MALMAISON, FRANCE

April 2021

Amongst 32% of 11,429 candidates, to complete five weeks of MOOC on Energy Transition and obtain the Certificate.

- Renewable energy challenges and floating offshore wind turbines.
- Electricity in global energy demand and societal approach to energy demand.
- Cost issues and risks of low-carbon technology minerals.
- Path to sustainable energy access and stresses on energy demand.
- Low-carbon electricity mix and innovation for a low-carbon future.
- Oil and gas exploration to distribution, gas resources and reserves.
- Geothermal energy for heating and greenhouse gas reduction.
- Carbon Capture and Storage and energy storage solutions.
- Natural hydrogen overview and role of natural gas and underground natural gas storage.
- Hydrogen production for decarbonisation and harmful emissions with Bioenergy and CCS.

Leadership Skills

ISA VICE PRESIDENT
INTERNATIONAL STUDENTS'
ASSOCIATION, ASHESI
UNIVERSITY, GHANA
September 2022 –
Present

ARM_Y CLUB VICE PRESIDENT
ARM ENGAGE STUDENT
CLUB, ASHESI UNIVERSITY,
GHANA
August 2022 – Present

PLATOON LEADER NYSC
BATCH B STREAM 1, RIVERS
STATE CAMP, NIGERIA
November 2020 –
October 2021

**ENGINEERING DESIGN GROUP
LEADER**
MECHANICAL ENGINEERING
DESIGN PROJECT, UNN,
NIGERIA
ME511 Group six, 2019

Volunteering

**GHANA SCHOOLS'
STRUCTURAL COMPETITION,**
UNIVERSITY OF
NOTTINGHAM GRADUATE
GUIDANCE GROUP,
ACCRA, GHANA
March 2024

MATHEMATICS TEACHER,
NATIONAL YOUTHS SERVICE
CORP,
PORT HARCOURT, NIGERIA
November 2020 -
October 2021

References

Available upon
request.

- Bio-sourced chemicals and fuels and IoT technology for energy efficiency
- Pinch methodology and waste heat exchanger for energy efficiency.

TRAINEE SOLAR ENGINEER SPECIALIST
ENERGY TALENT COMPANY
March 2021

- 250+ hours of online training in ETC'S Solar PV Foundational Course.
- 350+ hours of online training in ETC'S Solar PV Specialisation Course.
- Participated in two In in-class projects involving Solar Design and Installation.
- Designed schematic diagram of a Solar PV System using Microsoft Word.
- Participated in group activities involving solar research, documentation, and presentation.
- Demonstrated ETC's values during individual and group tasks (Trust and transparency; Teamwork and diligence; Global Excellence).
- Carried out day-to-day online challenges accurately and efficiently.
- Completed six weeks apprenticeship program at ICE Commercial Power: Off-takers Relations, Energy Audit, Solar Systems Design, Installation and Maintenance.

AUTODESK INVENTOR
LINKEDIN LEARNING
May 2022

- Proficient in Autodesk Inventor 2022, including 3D modelling, parts assembly, and technical documentation drawing.
- Experienced in creating complex 3D models and assemblies, ensuring precision and accuracy in design.

THE COSHH RISK ASSESSOR CERTIFICATION
THE KNIGHTS OF SAFETY ACADEMY
October 2019

- Demonstrated sufficient knowledge of hazardous substances and how they can affect the workplace.
- Proficiently demonstrated a comprehensive understanding of the risk assessment process, encompassing its key principles and methodologies.
- Understanding how the risk assessment process aids in implementing employee health protection measures.